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| <b>TRANSMITTAL FORM</b><br><i>(to be used for all correspondence after initial filing)</i> | Application Number   | 10/066,016                   |             |
|  | Filing Date          | January 31, 2002             |             |
|  | First Named Inventor | Bartholomew James Cunningham |             |
|  | Art Unit             | 3679                         |             |
|  | Examiner Name        | Michael P. Ferguson          |             |
| Total Number of Pages in This Submission   |                      | Attorney Docket Number       | 065363-0005 |

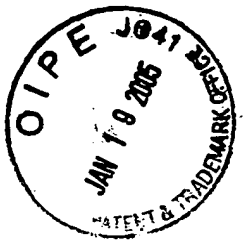
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| SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT |  |
|--|--|
| Firm or Individual name                    | Gregory M. Zinkl, Ph.D., Reg. No. 48,492<br>Patent Agent and Scientific Advisor<br>Dykema Gossett PLLC |
| Signature                                  | <i>Gregory M. Zinkl</i>  |
| Date                                       | January 18, 2005<br>19   |

| CERTIFICATE OF TRANSMISSION/MAILING   |  |      |  |
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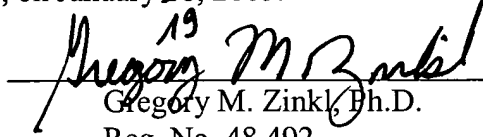
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## CERTIFICATE OF MAILING

I hereby certify that the foregoing CERTIFIED COPY OF PRIORITY DOCUMENTS, TRANSMITTAL FORM (PTO/SB/21) and POST CARD RECEIPT for Bartholomew James Cunningham, et al. for patent application entitled "An Adjustable Mounting Assembly for Mounting a Support Stay of a Clamp Arm to a Dipper Arm of a Back Acter" have been sent via Express Mail #EV 473486496US, postage prepaid, addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, EV 22313-1450, on January 18, 2005.

  
Gregory M. Zinkl, Ph.D.  
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**CERTIFIED COPY OF  
PRIORITY DOCUMENT**

I HEREBY CERTIFY that annexed hereto is a true copy of documents filed in connection with the following patent application:

Application No. S2001/0079

Date of Filing 31 January 2001

Applicant GEITH PATENTS LIMITED, an Irish company of Grangegeeth, Slane, County Meath, Ireland.

Dated this 22 day of January 2002.



*C. Kelly*

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Controller of Patents, Designs and Trademarks.

FORM NO. 1

## REQUEST FOR THE GRANT OF A PATENT

PATENTS ACT, 1992

The Applicant(s) named herein hereby request(s)



the grant of a patent under Part II of the Act



the grant of a short-term patent under Part III of the Act

on the basis of the information furnished hereunder.

1. Applicant(s)Name

GEITH PATENTS LIMITED

Address

Grangegeeth, Slane, County Meath, Ireland

Description/Nationality

An Irish company.

2. Title of Invention

"An adjustable mounting assembly for mounting a support stay of a clamp arm to a dipper arm of a back acter"

3. Declaration of Priority on basis of previously filed application(s) for same invention (Sections 25 & 26)Previous filing dateCountry in or for which  
filedFiling No.4. Identification of Inventor(s)Name(s) of person(s) believedby Applicant(s) to be the inventor(s)

BARTHOLOMEW JAMES CUNNINGHAM, JAMES DAVID BARRON and THOMAS MARTIN DE COURCEY.

Address

8 Athlumney Village, Navan, County Meath, Ireland; Glasallen, Collon, County Louth, Ireland; Oriel Road, Collon, County Louth, Ireland; respectively, all Irish citizens.

**5. Statement of right to be granted a patent (Section 17 (2) (b) )**

The applicant has derived the right to be granted a Patent from the inventors by virtue of a Deed of Assignment dated January 29, 2001.

**6. Items accompanying this request – tick as appropriate**

- (i) ☒ Prescribed filing fee (£ 50.00)
- 
- (ii) ☐ Specification containing a description and claims  
☒ Specification containing a description only  
☒ Drawings referred to in description or claims
- (iii) ☐ An abstract
- (iv) ☐ Copy of previous application(s) whose priority is claimed
- (v) ☐ Translation of previous application whose priority is claimed
- (vi) ☐ Authorisation of Agent (this may be given at 8 below if this Request is signed by the Applicant(s) )

**7. Divisional Application(s)**

The following information is applicable to the present application which is made under Section 24 –

Earlier Application No: .....

Filing Date: .....

**8. Agent**

The following is authorised to act as agent in all proceedings connected with the obtaining of a patent to which this request relates and in relation to any patent granted –

Name

Address

F.F. GORMAN & CO.

54 Merrion Square,  
Dublin 2,  
Ireland.

**9. Address for Service (if different from that at 8)**

F.F. GORMAN & CO., at its address as recorded for the time being in the Register of Patent Agents.

GEITH PATENTS LIMITED

Signed

Name(s): By:  Bart Cunningham

CAPACITY: Managing Director

Date

January 29, 2001



"An adjustable mounting assembly for mounting a support stay of a clamp arm to a dipper arm of a back acter "

5 The present invention relates to an adjustable mounting assembly for mounting a support stay of a clamp arm to a dipper arm of a back acter.

A clamp arm is an arm which is mounted towards the distal end of a dipper arm adjacent a bucket mounting for co-operating with the bucket for clamping one or more articles between the bucket and the clamp arm. Typical, the clamp arm  
10 extends substantially perpendicularly from the dipper arm adjacent the bucket, and by pivoting the bucket towards the clamp arm an article to be carried can be clamped between the bucket and the clamp arm. Typically, such clamp arms are used in conjunction with the bucket at the end of the dipper arm for carrying relatively long articles, for example, poles stanchions, and the like. Mountings for  
15 mounting such clamp arms to a dipper arm are known. Typically, a pivotal anchorage is located adjacent to the distal end of the dipper arm for pivotally connecting the clamp arm to the dipper arm. A support stay for supporting the clamp arm in an orientation extending substantially perpendicularly from the dipper arm extends from the clamp arm intermediate the ends thereof, and is anchored to the  
20 dipper arm by a separate anchorage which is spaced apart longitudinally along the dipper arm from the clamp arm anchorage. The anchorage for the support stay may provide a plurality mounting locations for mounting the support stay for securing the clamp arm in a plurality of different orientations extending outwardly of the dipper arm at different angles, for in turn, accommodating clamping of different size articles  
25 between the clamp arm and a bucket.

However, such known clamp arms, support stays and mounting arrangements suffer from a number of disadvantages. A particularly serious disadvantage is that when the clamp arm is not required, and in particular, when the back acter is to operate the bucket as a digger, it is necessary to remove at least the support stay, and in many cases both the clamp arm and the support stay. Otherwise, the clamp arm and the support stay would impair efficient digging by the bucket. This is a considerable disadvantage, since in general, once removed from a dipper arm a clamp arm and its associated support stay tend to be lost.

10 There is therefore a need for an adjustable mounting assembly for mounting a support stay of a clamp arm to a dipper arm of a back acter which overcomes this problem.

The present invention is directed towards providing such a mounting assembly.

15 According to the invention there is provided an adjustable mounting assembly for mounting a support stay of a clamp arm to a dipper arm of a back acter, the mounting assembly comprising an elongated mounting member defining a longitudinally extending central axis for mounting on the dipper arm with the central axis of the mounting member extending substantially parallel to the dipper arm, an anchor member for anchoring the support stay to the mounting member, the anchor member being selectively engageable with the mounting member at at least two anchor locations spaced apart longitudinally along the central axis of the mounting member for respectively supporting the clamp arm in at least one operative  
20 orientation with the clamp arm extending outwardly from the dipper arm for co-  
25

operating with a bucket mounted at the distal end of the dipper arm for clamping an article therebetween, and an inoperative orientation with the clamp arm and the support stay extending substantially parallel to the dipper arm.

5 In one embodiment of the invention the anchor member is slideable longitudinally along the mounting member between the respective anchor locations. Preferably, a retaining means is provided for retaining the anchor member in slideable engagement with the mounting member.

10 In another embodiment of the invention a securing means is provided for securing the anchor member at the respective anchor locations.

In one embodiment of the invention the securing means comprises a securing pin which is slideable through the anchor member and engagable with a corresponding  
15 receiver in the mounting member. Ideally, the securing pin is slideably carried in a guide bore extending through the anchor member and is slideable between a disengaged position disengaged from the receiver and an engaged position engaging the receiver. Preferably, a follower member extends transversely from the securing pin and is co-operable with a camming surface on the anchor member for  
20 operating the securing pin between the engaged and the disengaged positions, and ideally, for releasably retaining the securing pin in the disengaged position.

In one embodiment of the invention the anchor member is selectively engageable with the mounting member at a plurality of spaced apart anchor locations spaced  
25 apart longitudinally along the mounting member for supporting the clamp arm at a



plurality of respective operative orientations extending outwardly from the dipper arm at respective different angles to the dipper arm.

In a further embodiment of the invention the mounting assembly is mountable on the dipper arm at a location on the dipper arm such that a connecting anchorage for  
5 connecting the clamp arm to the dipper arm is located between the mounting assembly and the distal end of the dipper arm, and preferably, when the clamp arm is in the inoperative orientation the clamp arm extends from the connecting anchorage towards the mounting member, and advantageously, the support stay  
10 extends from the mounting assembly towards the connecting anchorage of the clamp arm.

In another embodiment of the invention a connecting anchorage is provided on the mounting member for pivotally connecting the clamp arm to the dipper arm, the  
15 connecting anchorage being provided longitudinally spaced apart from the anchor locations.

In one embodiment of the invention the mounting member defines an elongated track extending parallel to the central axis for slideably carrying the anchor member  
20 between the respective anchor locations.

In a further embodiment of the invention the mounting assembly comprises the support stay, and in a further embodiment of the invention the clamp arm is provided, the clamp arm being pivotally connected to the connecting anchorage and  
25 to the support stay, and the support stay being pivotally connected to the anchor

member.

Further the invention provides a dipper arm comprising the mounting assembly according to the invention mounted on the dipper arm.

5

The invention will be more clearly understood from the following description of an embodiment thereof which is given by way of example only with reference to the accompanying drawings, in which:

10

Fig. 1 is a side elevational view of the dipper arm according to the invention of a back acter having a clamp arm mounted thereto by an adjustable mounting assembly also according to the invention,

15

Fig. 2 is a view similar to Fig. 1 of the dipper arm illustrating the clamp arm in a different orientation,

20

Fig. 3 is a side elevational view of the adjustable mounting assembly according to the invention illustrated in Figs. 1 and 2,

Fig. 4 is a plan view of the adjustable mounting assembly of Fig. 3,

Fig. 5 is an end view of the adjustable mounting assembly of Fig. 3,

25

Fig. 6 is an exploded side elevational view of a portion of the adjustable

mounting assembly of Fig. 3,

Fig. 7 is a side elevational view of the clamp arm of the dipper arm of Fig. 1,  
and

5

Fig. 8 (a), (b) and (c) are front elevational views of different sizes of clamp  
arms for use with the adjustable mounting assembly of Fig. 3.

Referring to the drawings there is illustrated a dipper arm according to the invention  
10 indicated generally by the reference numeral 1 of a back acter (not shown). A digger  
bucket 2 is pivotally connected to the distal end of the dipper arm 1 and is pivotal in  
conventional fashion in the direction of the arrows A and B under the action of an  
hydraulic ram 3 through linkages 4 mounted on the dipper arm 1.

15 An adjustable mounting assembly according to the invention indicated generally by  
the reference numeral 5 is secured to the dipper arm 1 for mounting a clamp arm 7  
on the dipper arm 1 so that the clamp arm 7 co-operates with the digger bucket 2 for  
clamping an article therebetween. The mounting assembly 5 comprises an  
elongated plate member 9 which defines a longitudinally extending central axis 10.

20 Mounting slots 11 are provided in the plate member 9 for accommodating welds  
therethrough for securing the mounting assembly 5 to the dipper arm 1. A  
connecting anchorage 12 mounted on the plate member 9 pivotally connects the  
clamp arm 7 to the mounting assembly 5. A pair of longitudinally extending spaced  
apart side members 14 extend upwardly from the plate member 9 and define with  
25 the plate member 9 an elongated track 15 which slideably engages an anchor

member 17 for anchoring a support stay 18 for in turn supporting the clamp arm 7.

The support stay 18 and the clamp arm 7 are pivotally connected at 16.

The anchor member 17 comprises a carrier plate 19 which carries a pivotal anchor  
5 bracket 20 for pivotally engaging the support stay 18. The carrier plate 19 is  
slideable longitudinally in the track 15, and is engageable with the track 15 at a  
plurality of spaced apart anchor locations 21 for co-operating with the support stay  
18 for supporting the clamp arm 7 in a plurality of operative orientations extending  
outwardly of the dipper arm 1, see Fig. 1 and in an inoperative orientation, see Fig. 2  
10 with the clamp arm 7 and the support stay 18 extending substantially parallel to the  
dipper arm 1.

A retaining means for retaining the carrier plate 19 in the track 15 comprises a pair of  
longitudinally extending retaining members 24 which extend inwardly from the side  
15 members 14 and define with the side members 14 and the plate member 9 the track  
15.

A securing means for securing the carrier plate 19 and in turn the anchor member 17  
in each of the anchor locations 21 comprises a securing pin 25 which is slideably  
20 carried in a guide bore 32 extending through tubular guide member 26 and is  
slideable between a disengaged position illustrated in Fig. 5 to an engaged position  
(not illustrated) with the securing pin 25 engaging a corresponding receiver opening  
27 in the selected anchor location 21. A compression spring 28 located in the guide  
member 26 acts between a shoulder 30 on the securing pin 25 and a shoulder 31  
25 within the bore 32 of the guide member 26 for urging the securing pin 25 into

engaged position engaging one of the receiver openings 27 in the selected anchor location 21. A cam follower 35 extending transversely from the securing pin 25 co-operates with a camming surface 36 at the end of the guide member 26 for urging the securing pin 25 between the engaged and disengaged positions as the securing pin 25 is rotated through 180°. A handle 38 extending transversely from the securing pin 25 is provided for rotating the securing pin 25 in the bore 32.

In use, with the mounting assembly 5 secured to the dipper arm 1, the clamp arm 7 is ready for use. When it is desired to use the clamp arm 7 for clamping an article between itself and the digger bucket 2 the anchor member 17 is urged along the track 15 in the direction of the arrow C until the clamp arm 7 extends from the dipper arm 1 in a desired outwardly extending operative orientation. When the clamp arm 7 is at the desired operative orientation the securing pin 25 is urged from the disengaged to the engaged position by rotating the securing pin 25 through 180° for engaging the receiver opening 27 in the selected anchor location 21. With the securing pin 25 secured in the corresponding receiver opening 27 the clamp arm 7 is ready for use.

When the clamp arm 7 is not required the securing pin 25 is disengaged from the receiver opening 27 by rotating the securing pin 25 through 180°, so that the cam follower 35 co-operating with the camming surface 36 urges the securing pin 25 from the engaged to the disengaged position. The anchor member 17 is then urged along the track 15 in the direction of the arrow D until the anchor member 17 is in the last anchor location 21b. The securing pin 25 is rotated through 180° for engaging the corresponding receiver opening 27. With the anchor member 17 secured in the last

anchor location 21b the clamp arm 7 is in the inoperative orientation extending substantially parallel to the dipper arm in a direction from the connecting anchorage 12 towards the anchor member 17.

- 5    Additionally, the support stay 18 also lies substantially parallel to the dipper arm 1 and extends from the anchor member 17 towards the connecting anchorage 12. Thus, in the inoperative position the clamp arm 7 and the support stay 18 do not impair normal digging by the digger bucket 2, and there is therefore no need to remove the clamp arm 7 nor is there a need to remove the support stay 18.
- 10   Accordingly, the mounting assembly according to the invention overcomes the problems of prior art mountings for carrier arms.

- Referring now in particular to Figs. 8 (a), (b) and (c) clamp arms 7 of different sizes which may be used in conjunction with the mounting assembly 5 are illustrated. A
- 15   clamp arm of a size corresponding to the size of the digger bucket would normally be selected for use.

The invention is not limited to the embodiment hereinbefore described which may be varied in construction and detail.

1 ✓

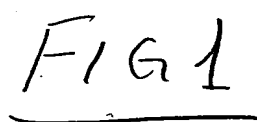


FIG 1

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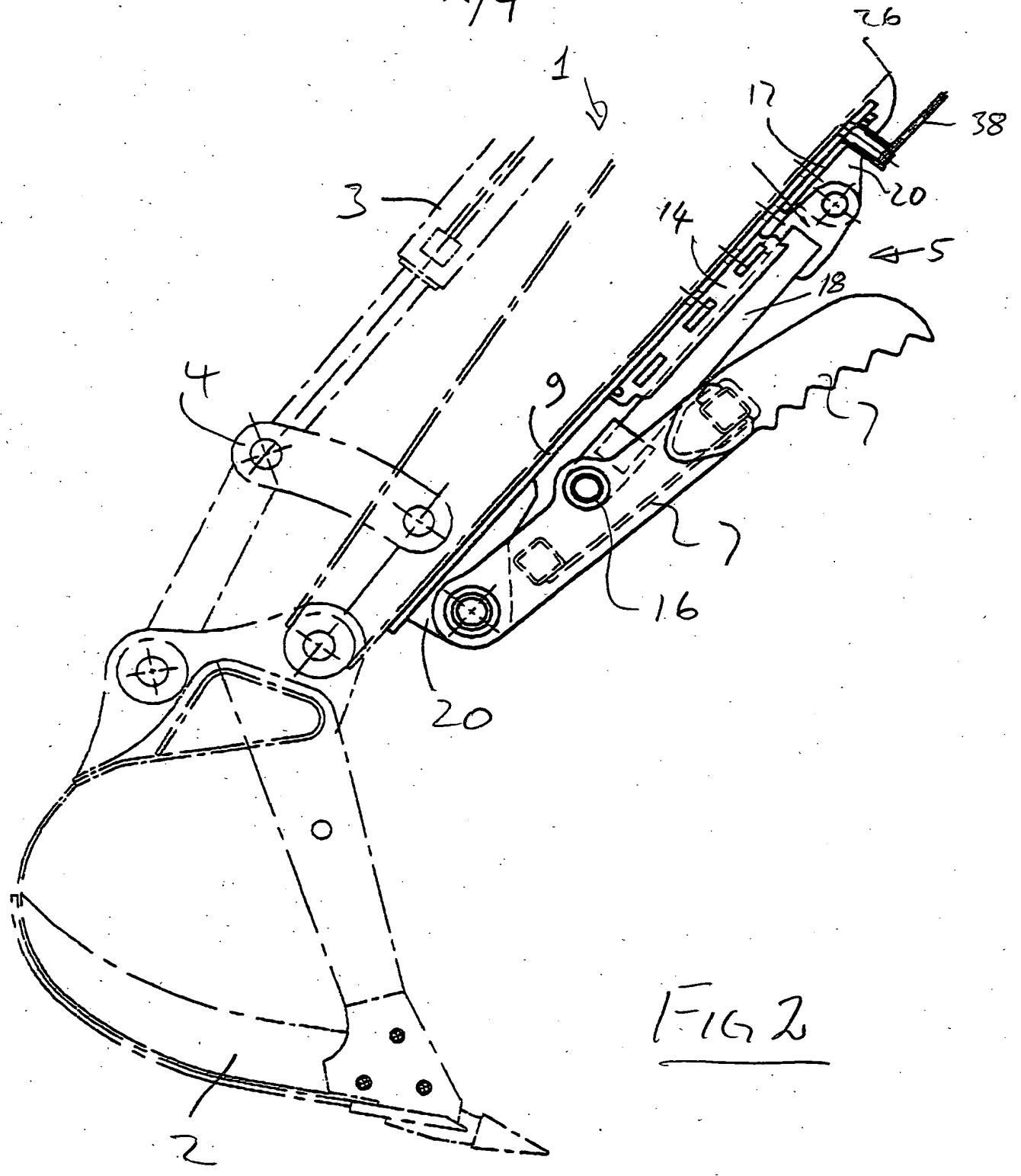
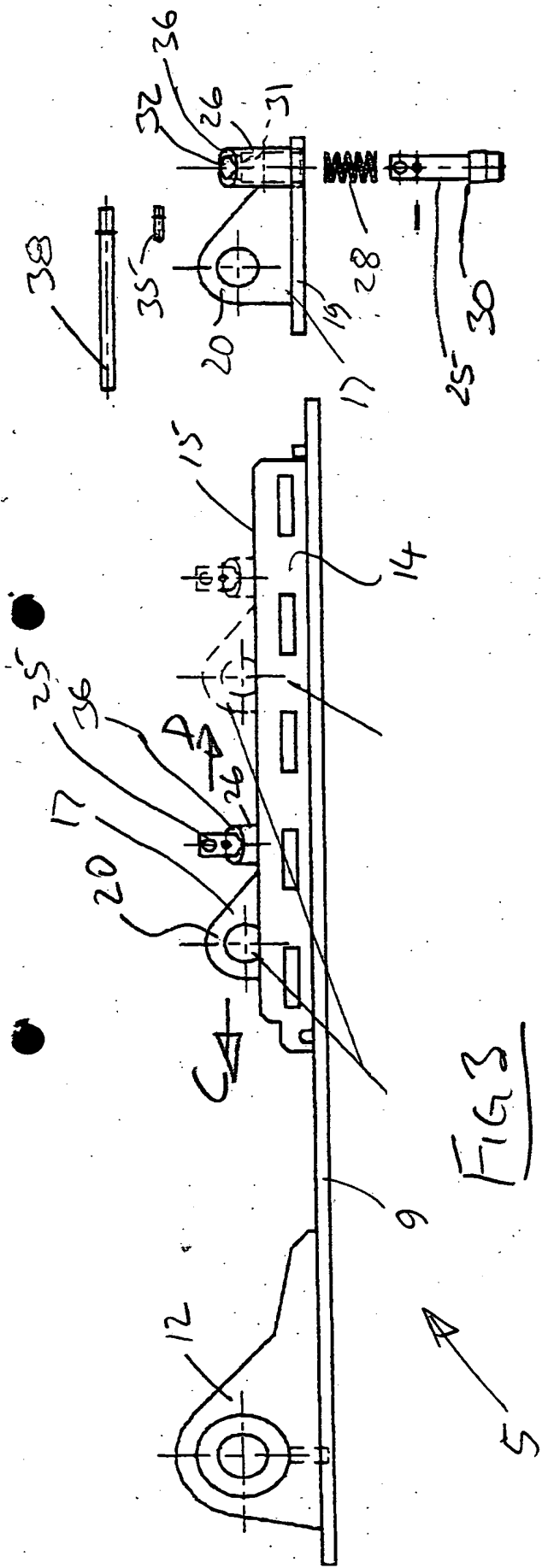
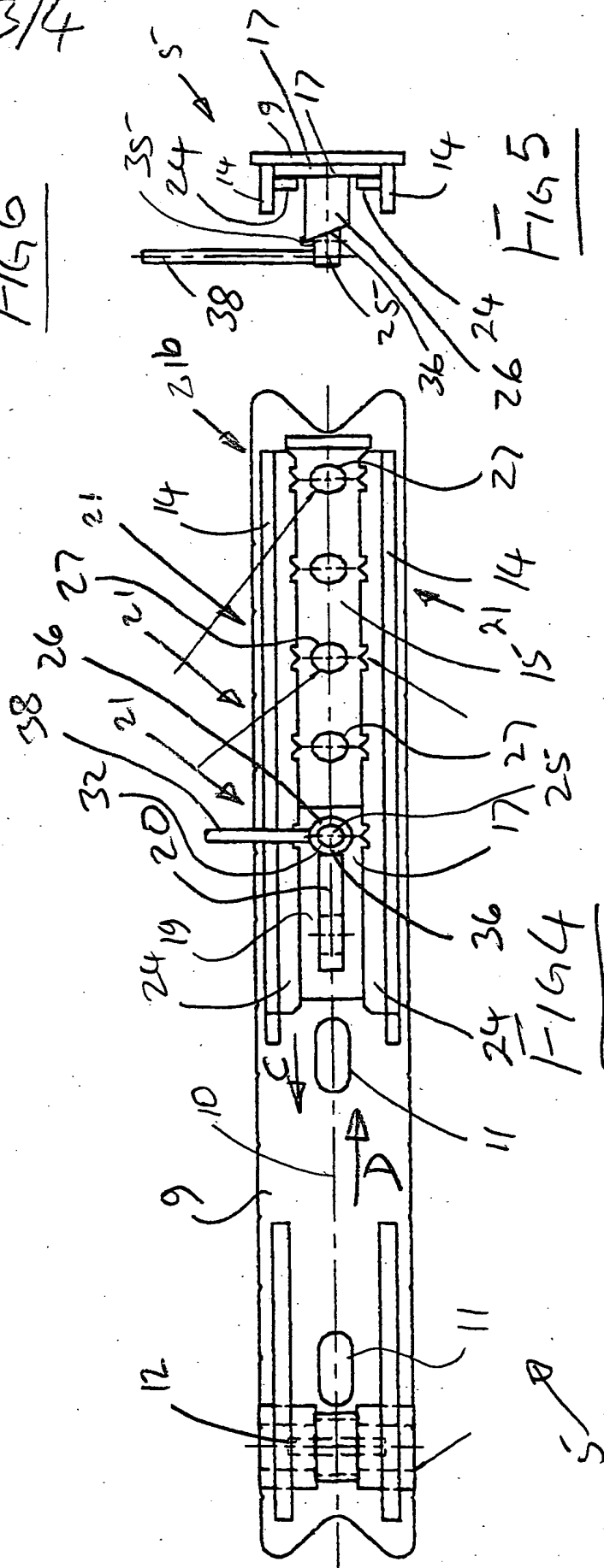


Fig 2





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FIG 6



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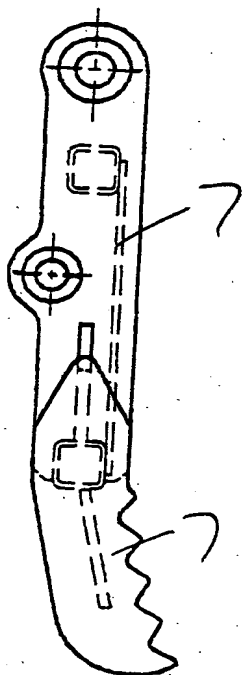
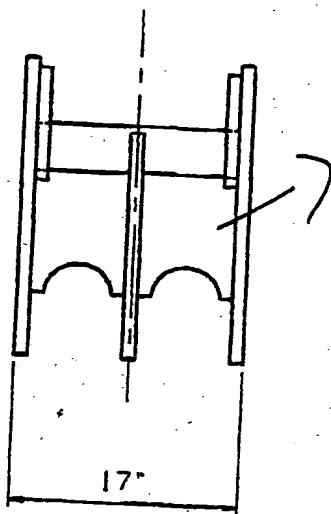
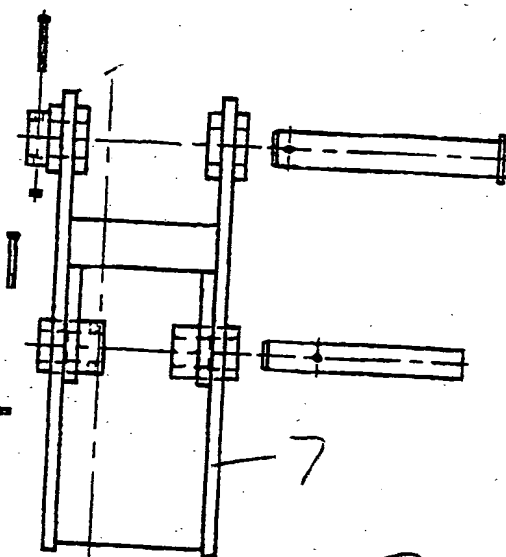
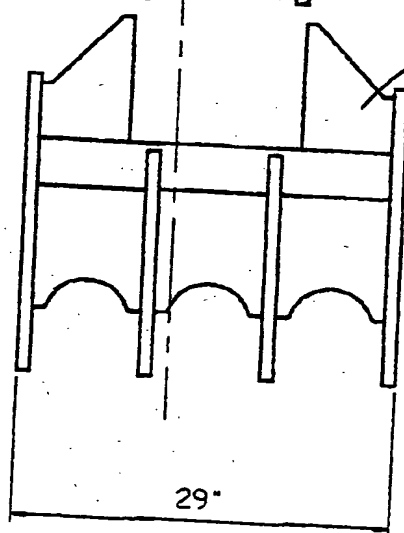


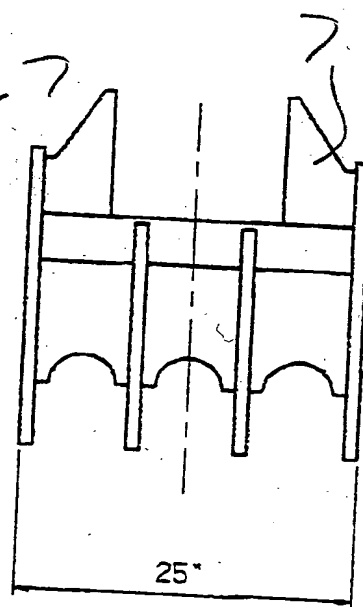
FIG 7



(a)



(b)



(c)

FIG 8